

# Cost and Management

VOLUME XXVII

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## ANALYZING COSTS FOR MANAGEMENT DECISION

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After coming to Canada from England in 1927, Mr. Beswick was engaged in municipal accounting. In 1940 he joined Canadian Airways and later managed a plant for Canadian Pacific Airways. At one time he was in charge of all accounting for C.P.A.'s war work, including the training schools under the British Commonwealth Air Training Plan. He joined Dominion Textile Co. Ltd. in 1944 and became Chief Cost Accountant in 1947. He is a Director of the Montreal Chapter of S.I.C.A.

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A native of Sudbury, Mr. Deeks attended the University of Toronto where he received his B.A. degree in Mathematics and Physics. After graduation he joined John Inglis Co., working in the Time Study and Cost Departments. His subsequent appointments were as Assistant Comptroller in 1946, Comptroller of English Electric Co. of Canada Ltd. in 1949, and he attained his present position of Comptroller, John Inglis Co., in 1951.

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Mr. Barrett has been a member of N.A.C.A. since 1920 and a practising Public Accountant for some years. He is well known as an author and speaker on accounting topics, both in Canada and the U.S.A. He recently held positions of Secretary-Treasurer, then Controller with the Murray Corp. of Detroit. He gave valued service as Wartime Chairman of the Controller's Committee of the Automotive Council for War Production and was a member of its Contract Termination Committee. This article and the papers by Mr. Beswick and Mr. Deeks were presented at technical sessions of the 12th Annual Ontario Conference of S.I.C.A. in Hamilton last month.

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## *Editorial Comment . . .*



FRANK E. WOOD, O.B.E., C.P.A., R.I.A.

### **OUR NEW PRESIDENT**

Frank E. Wood, O.B.E., C.P.A., R.I.A., Secretary-Treasurer and Director of Marathon Paper Mills of Canada Limited, was elected president of the Society of Industrial and Cost Accountants of Canada at the 32nd Annual "Cost and Management" Conference in Halifax. Mr. Wood, who was awarded the Order of the British Empire in 1946

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for his work with the Department of Finance in Ottawa, is also president of Marathon Sales Limited and secretary-treasurer and director of the Ormiston Mining and Smelting Company, Ormiston, Saskatchewan.

The newly-elected president is a man who believes that participation in many organizations, both industrial and recreational, aids immeasurably in carrying out his everyday responsibilities and therefore, has many interests outside his own administrative duties. Mr. Wood is a past chairman of the Midwest Branch, Technical Section, Canadian Pulp and Paper Association, a Past Master of the Freemasons, a member of the Toronto Board of Trade and Port Arthur Chamber of Commerce, a director of the Ontario Motor League, and a member of the Ontario Club, Toronto, the Royal Ottawa Golf Club, Ottawa, and the Port Arthur Golf and Country Club, Port Arthur.

For many years, he has been a member of the Society of Industrial and Cost Accountants, and was chairman of the Ottawa Chapter from 1941 to 1942. He was President of the Ontario Society for the 1946 term and became a director and officer of the national organization in 1942.

In addition to his many recreational and professional associations, Mr. Wood has gained a broad business experience. After coming to Canada in 1907 from Middlesborough, England, he joined Massey-Harris Company Limited and served as Assistant Purchasing Agent from 1913 to 1924. In 1924 he entered the pulp and paper industry as Chief Cost Accountant for the Abitibi Power and Paper Company Limited, Iroquois Falls. From 1939 to 1940 he was Office Manager for the National Steel Car Corporation at Malton, Ontario. Mr. Wood was appointed Chief Cost Accountant and Director of the Cost Inspection and Audit Division of the Department of Finance in 1940 and served in this capacity until 1947. That year he returned once again to the pulp and paper industry as Treasurer of Marathon Paper Mills, which consequently led to his present position with the company's head office in Toronto.

Mr. Wood brings a high degree of administrative and organizational ability to his new post. Although much has been done to advance the methods and techniques of cost accounting and financial management under the aegis of the Society of Industrial and Cost Accountants of Canada, a great deal remains to be done. With Frank E. Wood as president for the coming year, the accomplishment of many of these future objectives is assured.

#### EDUCATIONAL FOUNDATION ESTABLISHED BY S.I.C.A.

A significant event for Canadian business is the recent decision of the Society of Industrial and Cost Accountants of Canada to establish an Educational Foundation for the purpose of planning, directing, and extending its educational research programme. Application for in-

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corporation of the Foundation has been approved and Letters Patent have been issued under date of May 28th.

No one at all familiar with the Society's work can doubt the value of the establishment of the R.I.A. designation. To-day the use of this designation is authorized by government legislation in each of the ten provinces.

A student wishing to qualify as an R.I.A. may receive his instruction through the prescribed correspondence courses or through evening lecture classes provided by 20 universities across Canada. Throughout this development, the Society has been able to maintain uniformity of courses of instruction and of examination. Last year 2,074 students were registered with the Society having been an increase of 50% in the last two years.

If a rapidly increasing enrollment in the Society's courses is any criterion, then it can be said that the Educational work of the Society is a resounding success. But that is only our side of the picture. The officers of the Society have every reason to believe that top management is placing a high value on R.I.A. training. That this belief is well founded is shown by the fact that more and more executives are emphasizing R.I.A. training in their selection of industrial accounting personnel. It may be said, generally, that the aims of the Society are two in number. First, it seeks to turn out men capable of applying those up-to-the-minute techniques which facilitate closer control over operative and manufacturing costs. Second, it attempts to maintain and stimulate the highest possible standards of accounting practice in all fields of business in Canada.

As everyone engaged in commerce or industry knows, the whole field of business is essentially dynamic; consequently, the training of the industrial accountant never ceases. We need hardly stress that the best interests of management are inextricably bound up with continued progress in the education and training of industrial accountants. It is precisely because such education and training are a part of a continual process that the Directors of the Society have felt impelled to take another big step forward and establish an Educational Foundation. This will be a non-profit making body financed by the voluntary contributions of business and administered by a Board of Trustees drawn from among the leading personalities in the business community. The objective is to raise \$100,000.00 to finance a programme extending over the next three or four years. The broad aim of the Foundation will be to disseminate knowledge and encourage the use of advanced techniques in the field of Cost Accounting and Business Administration, by incorporating the latest developments into the existing courses of study sponsored by the Society.

To be more specific: the work of the new institution will be directed along five main lines; viz., General Accounting, Cost

## EDITORIAL COMMENT

Accounting, Business Mathematics, Industrial Legislation, Industrial Organization and Management. The research in each of these subjects will be under the direction of a specialist in his field and the results of such surveys of actual business practice will then be written into the courses leading to the R.I.A. Moreover, it is intended to investigate quite new developments in accounting and cost accounting concepts and techniques with a view to determining their applications and limitations. The findings of this research will be made available to those making donations to the Foundation. It is important to notice, however, that this is not the end result of any research financed by the Foundation. The first impact will be on the courses of study to be followed by R.I.A. candidates; and since the conclusions reached will be incorporated, when necessary, in the training of an Industrial Accountant, they will find their ultimate expression in business practice.

Those who have already contributed to the Fund have all stressed the significant service performed by the Society in the past. Without exception they have expressed the conviction that it is the responsibility of industry to give its whole-hearted support to the Foundation. After all, it is industry that stands to gain most from every improvement in cost accounting practice; and it is precisely through the Society of Industrial and Cost Accountants and its Foundation that such innovations will be brought into full view for the benefit of industrialists and manufacturers in Canada. There is no help like self-help.

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### **COST ACCOUNTANT**

Cost Accountant, now writing thesis on "A Standard Cost System for a Foundry", passed all exams for R.I.A., seeks opening in large cost department. Experienced in job, process and standard cost systems. Helped install standard cost system. Also experienced in general accounting, internal auditing, time study, job evaluation, merit rating, procedure manuals. Would also be interested in assistant comptroller-ship. Bilingual. Married. Willing to relocate anywhere in Canada. Full details will be supplied upon request. Salary requirement \$5,000.00 to \$6,000.00, dependent upon opportunity. Please reply to:

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## **C & M Round-Up . . .**

By N. R. BARFOOT, R.I.A.

### **Mid-Year Business Outlook**

- . . . Construction will reach a peak level of \$3,432 million.
- . . . Defence spending will remain at an annual level of \$2 billion until 1955.
- . . . Life Insurance sales are up 20% from last year.
- . . . Bank Saving Deposits stand at \$5,000 million, an 8% increase over last year.
- . . . People are paying back on installment debts at an accelerated rate.
- . . . Automobile production up 23% over last year.
- . . . Chemical plants worth \$130 million will begin operations this year.
- . . . House building starts will be 25% greater than last year.
- . . . Mining prospects look favourable for some time to come.
- . . . Oil and gas explorations are being carried on at an estimated cost of \$1 million per day. 150 million acres are being explored.
- . . . Retail trade is up 5.7% this spring.

### **Fire Insurance — 1952**

Here are a few quick facts on fire insurance in Canada for 1952.

- . . . Premiums paid — 146.9 million.
- . . . Total claims incurred 64.2 million to the loss ratio, on a written basis — 43.7%, on an earned basis — 47%.
- . . . Canadian companies total business — \$40.5 million.
- . . . British companies total business — \$52 million.
- . . . Foreign companies total business — \$54.3 million.
- . . . Canadian companies showed an increase of 11.1% in volume in 1951, British — 1.2%, and foreign — 0.5%.

### **Retail Revolution**

Shopping centres under way or planned will cost 50 million. The areas affected will be Montreal, Toronto, Hamilton, the Niagara District, Edmonton, Regina and Vancouver. Most of the shopping centres are planned as follows:

1. Neighbourhood centres for a limited population (4,000) with emphasis on food and convenience merchandise.
2. Suburban or district shopping centres, drawing on markets of upwards of 50,000 people with more customers coming by car than would to the neighbourhood centre.
3. Regional shopping centres, serving perhaps one million people, many from outside the immediate community. At least two or three of these giant developments are shaping up.

The shopping centres will probably be handled by big investment firms. The favoured type of businesses at the moment are Grocery and General Merchandise. However, several of the new developments planned would include theatres, and landscaped parks and in some cases good sized department stores.



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The main idea is of course to service scattered communities and to provide night service with wide parking facilities for city people who cannot shop during the day.

One of the larger variety is planned between Hamilton and Burlington. It will provide some 800,000 square feet of store space, some 60 to 70 stores and parking for as many as 7,000 cars. About 90 acres of land is involved and it is planned that the whole project will grow over a period of perhaps five years. Parking will be arranged in several segments. The choice location for such shopping centres is right on or within easy access to main traffic arteries.

Parking convenience is a big draw for this type of development but already some experts are predicting that the neighbourhood shopping centre may themselves, all too soon, clog up traffic arteries.

### **Do's and Don'ts of Insuring**

... Deal with a reputable, capable agency with all facilities for servicing your insurance programme. Protect against catastrophe loss when possible. Get legal advice on policy wordings.

... Have a loss prevention programme which has the support of management and is fully understood by the employees, especially in this period of increasing values, rates and losses. More and more, insurance is being purchased on an experience or cost plus basis.

... Review the insurance programme at least every six months; check on rates and coverage at least once a year.

... Establish a running survey of the programme which may be broken down into many sections, containing policies, endorsements quotations, accounts recommendations, and correspondence.

... Amount of insurance to be carried can be determined only by calculating values of the property to be insured by appraisal and inventory.

... Efficient appraisal is especially necessary where several buildings have been built at different times and equipment bought at different dates. An accurate knowledge of the value of a plant is especially important where there is a co-insurance clause in the contract.

... Insurance against loss or profits or other income while a property is shut down due to fire or similar mishap is important.

### **The University and Business**

The business school is becoming one of the largest professional faculties in nearly every Canadian University. The following information may be of interest:

... Registration has jumped more than 60% in the last decade.

... Enrolment is now over 4,000.

... Total graduates this spring over 1,000.

... Types of degrees granted — B.Com., B.A., M.B.A., M.Com.

The university business school has been accepted to-day by Canadian industry as a professional training ground for company officers.



## C. & M. ROUND-UP

The business schools realize that contact with industry is their best possible text book. They all try to establish a good working condition between school and local business firms. The case method is used quite generally. Here, every student gets a chance to express his opinion on the solution of actual business problems. The instructor acts merely as a moderator guiding the discussion. Most cases don't have any one correct solution and may not even present a serious problem. It is up to the student merely to analyze the situation and think about it.

The various deans of the schools say that requirements for graduates have increased and will remain strong for a period of some years.

### B.C. Boom

A review of the B.C. billion dollar boom reveals a fabulous story. Here are a few of the highlights.

... The Aluminum-Power undertaking of Alcan will cost \$550 million. Ultimate capacity will be 2,240,000 h.p., initial capacity of aluminum 90,000 tons per annum.

... Natural Gas ready to serve the interior — 152 million cu. ft. daily.

... Peace River gas reserves established to date 3.5 trillion cu. ft.

... Cement and Glass Industry Plant — 13 million.

... Refinery Expansion in the immediate future — 45 million.

... Total new investment expected this year in manufacturing industries — \$130 million.

The overall picture of British Columbia on a comparative basis since

| 1945 shows the following figures:                 | 1952      | 1945      |
|---|-----------|-----------|
| Population .....                                  | 1,198,000 | 949,000   |
| Personal Income (\$ mill.) .....                  | 1,680     | 823       |
| Value of Exports through B.C. Ports (\$ mill.) .. | 680       | 272.9     |
| Imports (\$ mill.) .....                          | 335       | 113.3     |
| Power Consumption (000 kw.h.) .....               | 4,500,000 | 2,788,557 |
| Retail Trade (\$ mill.) .....                     | 1,233     | 492       |
| Value of Building Permits (\$ mill.) .....        | 92        | 24.7      |
| Construction Contract Awards (\$ mill.) .....     | 156       | 38        |

### Housing and the Insurance Company

... 1952 — Life Insurance Companies financed mortgages for 36,000 out of 83,000 new homes.

... They provided \$280 million for new investment and housing.

... Since 1945 mortgage investments increased from 10% to over 31% of the life insurance companies total assets. As of 1952 they were holding 1,100 millions in mortgages. The companies plough back into mortgages all principal repayments.

... Between the years 1947-1952 mortgage loans through Insurance Companies totalled 1,485 million. At the same time total assets increased by 1,357 million. The mortgages therefore took 109.4% of the increase in the assets of the Canadian companies.

... Schools, streets and sewers are also part of housing and a good portion of life insurance money goes for bonds to buy these.

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THE "T" ACCOUNT METHOD FOR SOLVING FUND STATEMENT PROBLEMS, by Lewis N. Greer—  
The Canadian Chartered Accountant, May '53.

### BUDGETS AND BUDGETING

THE FIXED-FLEXIBLE BUDGET — A STUDY IN INTEGRATION, by Glenn Welsch — N.A.C.A.  
Bulletin, May '53, Sec. 1.

### CAPITAL

WORKING CAPITAL AND ITS IMPORTANCE IN COMPANY FINANCE, by K. C. Keown — The  
Australian Accountant, Mar. '53.

COMPETITION IN THE CAPITAL MARKETS, by Paul L. Howell — Harvard Business Review,  
May - June '53.

### CHAIN STORES

STOCKS-ON-HAND OF A CHAIN STORE — A CASE STUDY IN AUDIT PROCEDURE — The  
Chartered Accountant in Australia, Mar. '53.

### COST CONTROL

ALL-LEVEL COST CONTROL FOR THE MANAGEMENT TEAM, by R. G. Lochiel — N.A.C.A.  
Bulletin, May '53, Sec. 1.

COST CONTROL FACTS FOR THE FOREMAN, by B. Powell and F. Mancheski — N.A.C.A.  
Bulletin, May '53, Sec. 1.

MARKETING NEEDS COST CONTROL, by E. W. Kelley — The Controller, May '53.

A PROGRAM OF FINANCIAL PLANNING AND CONTROLS — The Monsanto Chemical Company  
— American Management Association — Financial Management Series, No. 103.

### COST REDUCTION

A COST REDUCTION PROGRAMME, by Pierre W. Hoge — American Management Association,  
Manufacturing Series, No. 209.

### DEPARTMENT STORE

A DEPARTMENT STORE EXECUTIVE EVALUATES INTERNAL AUDITING, by E. T. Ageno — The  
Internal Auditor, June '53.

DEPARTMENT STORE EXPENSE CONTROL, by Malcolm P. McNair and Eleanor G. May —  
Harvard Business Review, May - June '53.

MERCHANDISE CONTROL STATISTICS FOR A DEPARTMENT STORE, by D. L. Gaskell, A.C.W.A.  
— The Cost Accountant, May '53.

### DEPRECIATION

DEPRECIATION ON REPLACEMENT COST, by J. L. Davis — The Controller, May '53.

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A CASE STUDY IN DEFALCATIONS, by J. M. Gasarch — The Internal Auditor, June '53.

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COSTING FOR PIG PRODUCTION, by P. J. Martin, A.A.C.C.A., M.C.I.A. — Cost and Industrial  
Accounting Review, April - June '53.

### FINANCIAL CONTROL

A PROGRAM OF FINANCIAL PLANNING AND CONTROLS — The Monsanto Chemical  
Company — American Management Association — Financial Management Series, No. 103.

### FORMS

HOW TO CONTROL THE PROBLEM OF PARTIAL SHIPMENTS — Management Methods —  
May '53.

## **COST AND MANAGEMENT**

### **GOODWILL**

**GOODWILL IN ACCOUNTANCY PRACTICES** — *The Accountants' Journal* — Mar. '53.

### **INDUSTRIAL ACCOUNTING**

**THE INDUSTRIAL ACCOUNTANT — A PROFIT MAKER**, by S. D. Flinn — *N.A.C.A. Bulletin*, May '53, Sec. 1.

### **INDUSTRIAL ORGANIZATION**

**AUTOMATION TO DATE: PROGRESS TOWARD THE PUSH-BUTTON FACTORY** — A Panel Discussion — American Management Association — *Manufacturing Series*, No. 209.

**DEVELOPMENTS IN AUTOMATION** — A Panel Session — American Management Association *Manufacturing Series*, No. 205.

**A RE-EXAMINATION OF METHODS ENGINEERING**, by Loring Roach — American Management Association — *Manufacturing Series*, No. 209.

### **INDUSTRIAL PLANNING**

**BETTER PLANTS FOR TO-DAY'S AND TO-MORROW'S NEEDS** — *Factory Management and Maintenance*, May '53, Part II.

### **INDUSTRIAL RELATIONS**

**HUMAN RELATIONS FOR THE INTERNAL AUDITOR**, by D. W. Sannit — *The Internal Auditor*, June '53.

### **INSTITUTIONAL ACCOUNTING**

**ACCOUNTING FOR NON-PROFIT MAKING CONCERNS**, by Jan Szary — *The Chartered Accountant in Australia*, Mar. '53.

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**A DEPARTMENT STORE EXECUTIVE EVALUATES INTERNAL AUDITING**, by E. T. Ageno — *The Internal Auditor*, June '53.

**HUMAN RELATIONS FOR THE INTERNAL AUDITOR**, by D. W. Sannit — *The Internal Auditor*, June '53.

**THE IMPORTANT FACTORS OF A SUCCESSFUL INTERNAL AUDITING PROGRAMME**, by A. H. Kent — *The Internal Auditor*, June '53.

### **JOB EVALUATION**

**JOB EVALUATION AND MERIT RATING**, by J. J. Carson — *Business Management*, May '53.

### **MANAGEMENT**

**ALL-LEVEL COST CONTROL FOR THE MANAGEMENT TEAM**, by R. G. Lochiel — *N.A.C.A. Bulletin*, May '53, Sec. 1.

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**STABILIZATION OF EMPLOYMENT IS GOOD MANAGEMENT**, by Charles C. Gibbons — American Management Association, *Personnel Series*, No. 152.

### **MARGINAL COSTS**

**CAN MARGINAL COSTING SOLVE COST PROBLEMS?** by A. S. Donnelly — *The Australian Accountant*, Mar. '53.

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**MARKETING NEEDS COST CONTROL**, by E. W. Kelley — *The Controller*, May '53.

### **MATHEMATICS**

**TOP MANAGEMENT BY MATHEMATICS** — *Business Week*, May 30, '53.

### **MECHANICAL EQUIPMENT**

**BUILDING A CHECKLIST ON ELECTRONIC ACCOUNTING** — *Management Guide*, No. 51.

### **OFFICE ORGANIZATION AND MANAGEMENT**

**DEVELOPMENTS IN OFFICE WORK MEASUREMENT** — A Panel Session — American Management Association — *Office Management Series*, No. 132.

## CURRENT ARTICLES OF INTEREST

MANAGEMENT DEVELOPMENT IN THE OFFICE, by Thomas E. Hurns — American Management Association — Office Management Series, No. 132.

THE OFFICE MANAGEMENT FUNCTION IN THE COMPANY ORGANIZATION: TRENDS AND GOALS, by James E. McCabe — American Management Association — Office Management Series, No. 132.

QUALITY CONTROL IN THE OFFICE — A Panel Session — American Management Association — Office Management Series, No. 132.

A WORKABLE SYSTEM FOR OFFICE SUPPLIES, by Herman A. Downs — N.A.C.A. Bulletin, May '53, Sec. 1.

### ORGANIZATION

BETTER ORGANIZATION — WHAT THE ACCOUNTANT CAN DO, by Mason Smith — N.A.C.A. Bulletin, May '53, Sec. 1.

PREPARING FOR A MEETING OF THE BOARD, by H. T. Okey — The Australian Accountant, Mar. '53.

TEN WAYS TO IMPROVE TEAMWORK BETWEEN DEPARTMENTS, by Eugene Whitmore — Management Guide, No. 51.

### OVERHEAD

THE ALLOCATION OF OVERHEADS TO COMMODITIES MANUFACTURED UNDER ONE ROOF, by Walter Pinner — Cost & Industrial Accounting Review, Apr. - June '53.

### PAYROLL ACCOUNTING

DEFERRED PAY: HOW AND WHY — Business Week, May 30, '53.

### PENNY ELIMINATION

"CENTS-LESS" ACCOUNTING, by R. H. Birkhold — The Internal Auditor, June '53.

### PENSION PLANS

A METHOD OF ACCOUNTING FOR A PENSION PLAN, by John V. van Pelt III — The Controller, May '53.

CURRENT TRENDS IN INDUSTRIAL PENSION PLANS, by Wallis B. Dunkel — American Management Association, Personnel Series, No. 152.

### PRODUCTION CONTROL

LOWER-COST PRODUCTION FOR TO-DAY'S AND TO-MORROW'S NEEDS — Factory Management and Maintenance, May '53, Part I.

PROCEDURES AND PITFALLS IN PRODUCTION CONTROL, by W. W. Gilmore — American Management Association — Manufacturing Series, No. 200.

### PROFITS

BUSINESS INCOME, by T. A. M. Hutchison — Canadian Tax Journal, Mar. - Apr. '53.

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AN INQUIRY INTO INTERNAL REPORTING, by Robert D. Hay — N.A.C.A. Bulletin, May '53, Sec. 1.

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### SMALL BUSINESSES

EXECUTIVE COMPENSATION IN SMALL COMPANIES, by James M. Rosow — Harvard Business Review, May - June '53.

### STANDARD COSTS AND COSTING

STANDARD COSTS IN OPERATION, by D. O. Walker — The Accountants' Journal, Apr. '53.

### STOCKS, STOCKHOLDERS, BROKERS

ANALYSIS OF STOCK OWNERSHIP, by W. L. Crum — Harvard Business Review, May - June, 53.

A COMPANY GUIDE TO EFFECTIVE STOCKHOLDER RELATIONS — Research Report No. 21 — American Management Association.

## COST AND MANAGEMENT

### TERMINOLOGY

TERMINOLOGY OF COST ACCOUNTANCY, issued by The Australasian Institute of Cost Accountants — Cost Bulletin, Apr. '53.

### TIME AND MOTION STUDIES

A WORK MEASUREMENT PROGRAM, by Peter York — Business Management, Apr. '53.

### WAGES

NEW FACTORS IN WAGE DETERMINATION, by Frederick H. Harbison — American Management Association — Personnel Series, No. 150.

### WELFARE PLAN

LIVING WITH WELFARE AND RETIREMENT FUNDS IN INDUSTRY, by Joseph E. Moody — American Management Association — Personnel Series, No. 150.

### WORK SIMPLIFICATION

DEVELOPMENTS IN OFFICE WORK MEASUREMENT — A Panel Session — American Management Association — Office Management Series, No. 132.

WORK SIMPLIFICATION CUTS PLANT AND OFFICE COSTS, by H. F. Burrows — N.A.C.A. Bulletin, May '53, Sec. 1.

A WORK SIMPLIFICATION PROGRAM, by W. R. Clark — Business Management, Apr. '53.

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## PERSONALS

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# Analyzing Costs for Management Decision . . .

By B. F. BESWICK,

*Chief Accountant, Dominion Textile Co. Limited.*

*What and how much information should be included in reports to management? In answering this question, the author discusses the content, installation, and language in cost reports for top management and subordinate levels of management.*

ONE of the foremost problems confronting management to-day is lack of adequate information. This is surprising when we consider the amount of attention which has been devoted to the subject of cost control reports during the past few years. To my mind this is largely due to two main factors:

1. The inability of management to determine its requirements.
2. The inability of the cost accountant to present data in a concise and clearly understandable form.

The outcome of this is that management's efforts are impeded by the non-transmission of essential information and the cost accountant is impeded by having to prepare and transmit a mass of non-essential information.

There are those who say if you make a good quality product, and advertise well, your product is bound to sell. This may be so but I think that the Company which relies solely on this technique, is in the small minority. Certainly these things are important but coupled with a good cost control plan I think they are far more effective in producing profits, which, after all, is one of the most important objects of business.

How is management to become knowledgeable of its affairs? How are they to become adept at manipulating the many strings which comprise the modern business enterprise? Because they obviously cannot have that personal contact with all details that make up the present day complex company they have to rely on what someone else tells them.

This telling business can take several forms. (1) We can do it personally. (2) We can write letters and (3) We can prepare regular formal reports. The disadvantage of doing it personally is that the executive may not remember all you told him, you may not have all your facts properly marshalled, and may come off second best in any ensuing argument, not because your story is weak, but because you have not taken a course in debating — and remember he is the boss who has a say in your cheque. The second, of writing letters, can tend to become irregular, lack completeness, and may have a taint of scariness about. The third, that of regular reports giving complete coverage is by far the most desirable. A combination of reports and letters may, at times, be used most effectively.



## COST AND MANAGEMENT

### **Cost Reports for Top Management**

I believe that any successful system of cost control is doomed to failure unless it starts from the top. Unless you get the top executives interested, and enthusiastically behind you it will be a hopeless task. Not only must he be a silent advocate of cost control but he must ask questions — seek out the why and wherefore of off-standard conditions. He must ask his plant managers what they are doing to reduce losses. He must encourage these managers to use their reports. To be ever seeking ways to improve their results. If this happens these men in turn will soon take a lively interest in cost control and take the same attitude with their subordinates.

The problem is: how do we get top management interested in our reports? How do we get them to take action? Let us remember that this level of management is usually engrossed in a variety of problems all of which demand and deserve attention. Your reports, quite likely, rank equally, in their mind, with quality control, new markets, new products, material substitutes, labour problems, and a host of other problems.

If we present them with a voluminous report covering every minute detail of operations for the past month they will be inclined to look at it with the mental reservation that this is something really important. So important that I must spend several hours studying it—to-morrow, when I will have the time it deserves. The only unhappy thing about this is that to-morrow they are just as busy as to-day and so back to the desk your report goes. After a few days of this they relegate it to the files and such is the fate of a well meant report, replete with the kitchen sink, and full of sweat, and tears.

What this class of management want and will use if they get it, is something brief, meaty, cogent, and all-inclusive. They want the highlights, highlighted for them. They are not interested in the details of each process in a plant. They have not the time to delve into details but prefer to leave these to the man they hired to run the plant. They are interested only in his success in attaining objectives within his control.

If you can get top management to act by reason of attractive reports, you will soon find the lower levels of management taking an intense interest in the reports you prepare for them and you will thus automatically overcome the problem of getting them to use the data you prepare.

### **Reports for Factory Supervision**

So far I have said little about the content of cost reports. I propose to deal with this phase of reporting in the discussion of data to be provided for factory supervision.

To my mind, factory supervision should receive reports on all operations over which they exercise control. These reports should be

## ANALYZING COSTS FOR MANAGEMENT DECISION

in enough detail to enable them to pinpoint undesirable, or off-standard conditions, with minimum effort and lost time.

To me the use of standards is essential. If fair, attainable standards are set for each operation, and type of expense, the job of highlighting excess costs is made easier and hence can be done with a minimum of clerical effort. Where you have a multiple product plant, it is well nigh impossible to get accurate, comparative figures without great expense and considerable delay. These two factors prejudice most people against costing work.

One element of cost which always interests factory supervision is labour. It is tangible, easily measured, and hence attracts the interest of most factory supervisors.

The type of report best suited for dealing with labour is a weekly or fortnightly one showing what the standard cost should have been in relation to production and compared with the actual costs from the payroll. The difference between the standard and actual costs, or variance, should be analyzed to indicate the cause of the loss. It may be the payment of wage rates, either below or above standard, it may be efficiency. If these causes are brought out and pinpointed it will save time and encourage prompt, remedial action.

If machinery or equipment is the dominant feature in production and this equipment, by operation, incurs expenses, a report of machine usage is most important. Here again standards should be employed if at all possible.

The most popular method of arriving at machine efficiency is to show the standard machine hours that should have been used for the units produced during the period. This compared with the actual will give the rate of efficiency.

If a machine is not kept operating at maximum efficiency, it will, nevertheless, incur expenses (repairs, power, etc.) about equal to the amount it would have incurred if operated at top efficiency.

Hours operated in excess of standard, if valued at the dollar cost per machine hour, will give some indication of the amount lost through reduced machine efficiency.

A word at this point about the relationship between operator efficiency and machine efficiency might be in order. Generally speaking, when the job assignment of an operator is increased he will show increased efficiency as an individual, in other words, he will produce more than his standard. But if he is unable to tend his machines properly, the machine efficiency will decline. It is quite important to know where these two lines cross one another cost wise for a small saving in labour cost might be made at the expense of a far greater loss in machine efficiency.

Reports on the usage of materials are most important, especially where there is a great deal of waste made as a normal part of the operation.

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Where this waste takes the form of various types, each having a different recovery value, it is preferable to show both quantities and values for each type. The advantage of showing them in this fashion is that it enables the supervisor to direct his attention to those types involving the most loss of money. For example, if quantities only are shown, the type showing the highest figure would receive the most attention. If this particular type had a high recovery value, the loss might be rather negligible. At the same time there may be another type showing a lesser quantity but where the recovery value would be much less and consequently a greater monetary loss might be involved.

If there are possibilities of using substitute or non-standard materials in any processing, a report of the effect on cost of these substitutions would be most valuable. Oftentimes, the temptation to resort to substitutes as an expediency is great. This practice, if widespread, can have a great effect on cost or quality and could quite easily make substantial inroads into profit, especially if the article is priced for sales purposes on lower cost material. If the use of a lower grade material is substantial, losses for second quality products or rejects can readily wipe out any saving in cost arising from use of lower grade material. In addition to which a loss of reputation might be sustained in the consumer field.

Here again reports should be prepared if this practice takes on significant proportions.

Quite apart from any report or statement of overhead that may be presented to the foreman showing his efficiency gain or loss in terms of total overhead, it is important to provide him with some idea of individual expenses if such expenses be within his control.

If he originates such expenses, and they can be measured and charged directly to his department, then he should be provided with a report showing how successful, or otherwise, he has been in bringing them under control.

Power may be left on while machines run idle, not only does this consume power but it causes unnecessary wear and tear and builds up into maintenance costs. Steam may likewise be wasted. Consumable supplies may be used extravagantly. These things in themselves might be small but pennies soon turn into dollars and in the aggregate they could run into sizeable sums of money. This is not the only thing involved, for if we become thoughtless with such matters we are also apt to fall into the habit of being indifferent in other affairs.

All reports to the factory supervisor should be worked out with him. If he is to use them effectively, he must know their content, the principles employed in preparing them, and he should feel that he has played a part in devising them. If he is not in complete agreement with you on these points, he is likely to belittle them especially if they indicate unfavourable results.

## ANALYZING COSTS FOR MANAGEMENT DECISION

I firmly believe that the plant supervisor is the first line of management. He is the one who can effect economies, both big and small, right on the scene of operation. He is top management's closest and permanent contact with the worker. If he is kept fully informed at all times he can do a terrific job.

In my opinion, the type of reports outlined above are not enough if we want the supervisor to really represent management. In addition to these he should receive, occasionally, some simple reports on the overall position of the business. These will enable him to tell others with whom he comes into contact with how things are going. We are all familiar with the propaganda circulated by Unions. In my belief much of this could be countered effectively if our first line of management were given the opportunity to talk up the Company's position. It is far more convincing if this job is done by the supervisor. To the average worker, the President's story is not too convincing.

In preparing reports for all levels of management I feel that occasionally we should change the style or inject a little variety. This makes for easier reading and prevents them from becoming too stereotyped.

### Installing Reports

Perhaps the most important part of initiating a report is to ascertain the requirements of the recipient. All too often the report is initiated by the Cost Accountant giving the information he thinks is required, or by the Cost Accountant merely asking the recipient what he wants. An off-hand question like this will surely bring an off-hand reply with the result that another unsatisfactory report has been created. Surely if we are going to spend time and money preparing reports we should devote some time to ensuring that they are the best that we can devise and that they will be used effectively. This can be a slow and sometimes frustrating procedure but it is surprising how profitable it is. Both the Accountant and the Plant Supervisor will get to know one another's problems better. You can educate him and in turn he will give you some education. Do not be too fussy about standardization. People, as well as problems, differ and a report tailor made to a man's particular temperament is far more useful than one designed for universal use. What may be hot stuff to one man may be utterly useless to another. If you want to consolidate all reports for the purpose of obtaining an overall summary, and most companies do, set up the data in the form you require in your own office and keep it there.

The Cost Accountant should do his utmost to keep a proper balance between the data furnished on the various types of costs. Emphasis should be laid on the larger items and the least costly should be subordinated. It is surprising how readily so called "fixed costs" can be reduced if we take a little time to examine them and bring them to the attention of management in a clear and understandable manner. If for

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example they can be related to a unit of production where their impact on cost can be forceably illustrated it will certainly stimulate action on the part of an alert management.

Periodically there should be a housecleaning job done on all reports. Review them critically and make them justify their existence. Too many of the useless reports we have to-day were created to take care of situations and people who are no longer with us.

### Report Language

How often do we overlook this important feature? Does the report convey the desired message in clear, simple and understandable terms? The professional language of Accountants, like that of Doctors and Lawyers, for example, is oftentimes understood only by themselves. Every report should be clearly understood by the reader. If it is not, it fails in its most important objective. Let us take a leaf out of the page of the news reporter. This fellow knows plenty of big words, some ambiguous ones, too, but does he boast of his knowledge by plastering them across the pages of our daily newspapers? He calls a fire, a "fire", a deteriorating situation, a "mess". We, like the reporter, want our message to be read and understood, but we go still further — we want to stimulate action — we want to get things done.

Let us therefore abandon all language which is likely to be misleading. Let us use terms and descriptions that everyone understands. Let us call Unfavourable Variances "Losses", because that is what they are to the average factory man, and Credit Variances "Gains".

A great majority of Cost Accountants received their initial training in the field of financial accounting and, in many instances, they have carried the inhibitions gained there into the area of cost accounting. To my mind the requirements of these two branches of accounting are different. Nothing is so frustrating to a production man as to deal with a Cost Accountant who employs "balance sheet" techniques. We should always bear in mind that seldom do cost reports have to comply with the requirements of the Companies Act.

In my opinion cost reports, in addition to being good, must be sold. If we don't advertise our wares much of our ability, our qualifications, will go unnoticed and unused. Management generally does not realize fully what they can expect from the Accountant unless we tell them.

Our advertising should not be boastful but it should be coupled with enthusiasm and a willingness to do things cheerfully, quickly and intelligently.

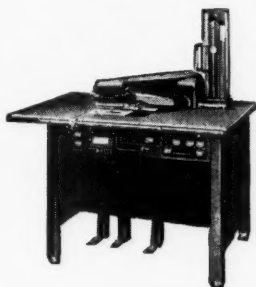
What type of a person should the Cost Accountant be? He should be—

- (a) Imaginative — no blinkers to limit his field of vision.
- (b) Resourceful — able to improvise — often an educated guess is far more valuable than accuracy at a considerable cost in time.

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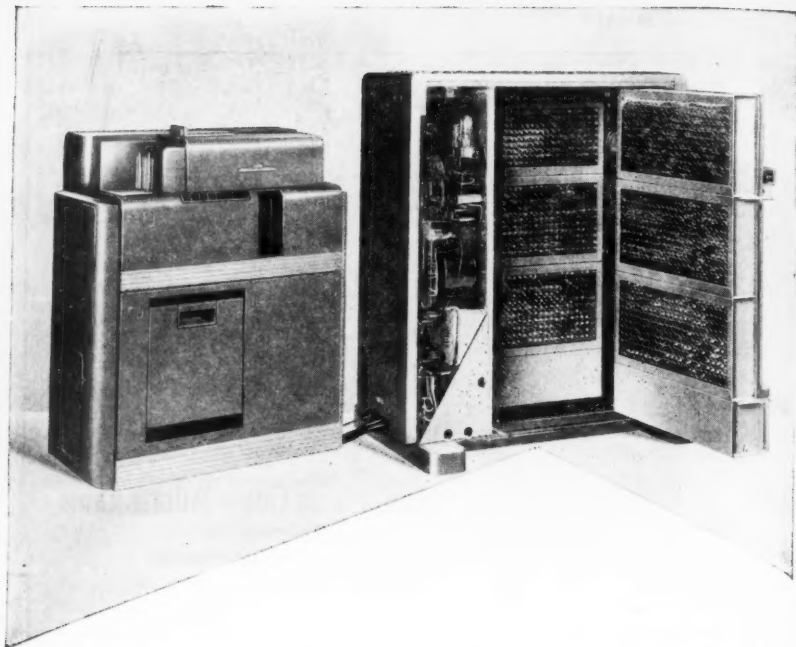
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- (c) Good personality — able to get along well with others.
- (d) Good sense of proportion — contemptuous of trivia and other energy sapping cankers.
- (e) Knowledge of the business — able to discuss manufacturing problems with the production men — sales problems with the sales force, etc.

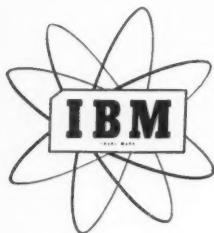
Above all, the Cost Accountant must do all he can to bring an end to speculation about facts which can be known. How many of us have had the experience of attending meetings and discussions where decisions are made based on opinions and hunches instead of facts which could have been known. We must do our full share in making all the facts which it is possible to produce available as required. It is much more useful to invest management's power of speculation in speculation about the unknowable.

I am firmly convinced that a great field of opportunity lies ahead of the Cost Accountant. It remains to be seen if he can measure up to the job. If he does not, others will step in to fill the void, for an alert, progressive management will not go unsatisfied no more than will they tolerate mediocrity.

The opportunity is here for us to take — Will we take it?



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## Cost Factors in Pricing New Products . . .

By G. A. DEEKS, B.A.,  
Comptroller, John Inglis Co.

*The author contends that the cost factors which must be considered in determining the selling price of a new product fall into four major divisions: pre-manufacturing, manufacturing, post-manufacturing, and profit margin. In this article he discusses these factors in sequence to determine the profit margin of a hypothetical consumer product.*

I HAVE been asked to discuss with you the "Cost Factors in Pricing New Products" and your programme introduces this subject in these words: Whereas prices on established lines are governed by competition, a new product does not have to be introduced unless the estimated cost compares favourably with the probable selling price. While prime costs may be estimated with some accuracy, the heart of the problem is to be found in establishing the proper overhead rate, selling and administrative expense. It then poses the question: "What factors should be considered in determining the margin of profit which should be expected?" I shall attempt to discuss the matter in that vein.

This topic is very wide in scope and while, broadly speaking, the fundamentals are invariable, the cost factors requiring consideration will vary in accordance with characteristics of manufacture or distribution which are specific to the product. Therefore, in order that we may establish some limits to this scope, I should like to restrict our thinking to manufactured consumer goods and discuss these factors with respect to a product such as a washing machine.

Now let us assume that the sales manager of a company which manufactures a line of household appliances has stated to its management that, in his opinion, the company should extend its line by adding another product to it. As part of the evidence which he presents to back up his opinion, there is a market survey showing graphically the national growth curve of the market for this product over the past ten years in terms of units sold. He also presents graphically the analysis of this growth curve by geographical area—in all probability by province. If he is very enthusiastic he might show the growth in the number of families in each of the areas as well. He tells management who would constitute the competition, where their factories are located and what their retail prices are. In conclusion, he says: "Gentlemen, if you can give me a product that is competitive in design, quality and price, I reckon we can take X% of that market." Well, management takes a look at the growth curves and decides that, by and large, the product provides some very attractive possibilities. However, they do not have the product yet and, before they approve an appropriation for funds to design, develop and build a prototype, they would like to hear from the accountants on the economics of the problem based on the as-

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sumption that we can build the product and, excepting transportation costs, distribute it as cheaply as our competitors. So the accountant takes the sales manager's sheaf of papers to his office and begins his study. He relates transportation costs arising from shipping his product to the various geographical areas with those of his competitors. He also relates transportation costs on basic raw materials to those of his competitors. Finally, he makes an analysis of American competition and the location of its factories. From this analysis he can approximate the portion of the laid down price which is duty and transportation and relate it with his own transportation costs. These studies will be rough but they will indicate to the accountant which company has the advantage resulting from differentials in transportation costs arising from the geographical location of the market and the factory. In the case of American competition it will indicate the margin after transportation considerations, that we have by reason of the duty impost.

Now let us assume that the accountant reports favourably and that, as a result, Management decides to proceed with developing a design and building of a prototype. The matter is placed in the hands of engineers and the accountant leaves the meeting making a mental note that in subsequent considerations he must discount somewhat the X% of the market which the sales manager says we will take because he knows that a good sales manager is inherently optimistic and that his estimates are flavoured accordingly.

We have decided to develop a design and build a prototype which, if competitive, will constitute another product in our appliance line. Now, let us stop for a moment and ascertain what factors we must consider in determining our selling price. They are as follows, and we shall discuss them in that sequence.

|  |                                  |         |
|--|----------------------------------|---------|
| Pre-Manufacturing:                     | (a) Design and Development Costs |         |
|  | (b) Additional Plant             |         |
|  | (c) Tool and Tool-proving costs  |         |
| Manufacturing:                         | (a) Material Costs               |         |
|  | (b) Labour Costs                 |         |
|  | (c) Overhead                     |         |
| Post-Manufacturing<br>or Distribution: | (a) Sales                        | Expense |
|  | (b) Advertising                  | Expense |
|  | (c) Administrative               | Expense |
|  | (d) Shipping                     | Expense |
|  | (e) Transportation               | Expense |
| Profit Margin:                         | (a) Capital Employed             |         |
|  | (b) Competition                  |         |

## COST FACTORS IN PRICING NEW PRODUCTS

### **Pre-Manufacturing: (a) Design and Development Costs:**

There are two schools of thought on the treatment of design and development costs. One holds that research and development costs should be written off as a current expense and their reasoning is based on the fact that a research and development department, is staffed by highly skilled men whom the company would be very reluctant to release even under an extreme economy drive.

They contend that the disposition of the costs should be made by studying the basic reason for having a development group rather than by a study of the results, quite often a nicely bound report with no commercial value, achieved by various portions of the incurred costs. From this they conclude that the cost is either fixed or quasi-fixed and, therefore, should be written off currently. On the other hand, the second school contends that research and development costs should be segregated in accordance with the projects they have on hand and that portion which results in a new product or a new model of an existing product should be treated as a deferred asset to be written off on an amortized basis over a period of time — usually three years. The remainder is written off to profit and loss as a separate item of cost. These two schools of thought are mentioned because from a product cost point of view each requires a different type of application. The former implies an application based on a fixed percentage of the dollar value of the overall sales output whereas the second requires an application based on a rate of amortization computed from a consideration of the cost and the forecast output in terms of units during the amortization period. Personally, for reasons we shall discuss under profit margin, we lean towards the second school.

### **Pre-Manufacturing: (b) Additional Plant:**

After the design and development department have made a prototype that is satisfactory, the product engineer with his draftsmen translates the design into component and assembly, or working drawings. These working drawings are turned over to the process engineering or pre-planning group who are asked to determine the additional plant and manufacturing facilities which are required to provide capacity for manufacture of this new product at a rate of "Y" units per annum. They review the working drawings, establish the processes, relate the resultant load to the capacity of existing equipment and, in due course, submit a brochure stating what has to be done and what additional facilities shall be required to provide the necessary capacity for the programme. In such a brochure, the expenditures may be either all capital or partly capital and partly expense or all expense. Our brochure includes the cost of each item and since the process engineer very wisely had consulted the cost accountant regarding end

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allocation we find a very neat and correct segregation of the expense and capital items.

This brochure is very important to the accountant who assists in establishing the price of our new product. The expense items are pre-production costs and, regardless of how we handle it in our ledgers, we must incorporate it into our product cost and we suggest that, as good a basis as any, is a rate per unit based on the cost and three years' output.

The capital items will determine the additional amount of depreciation which we shall charge to the expense of the factory departments in which the components for our new product shall be processed.

### **Pre-Manufacturing: (c) Tool and Tool Proving Costs:**

The process engineer, having determined the process and methods of manufacture hands the drawings over to the jig and tool design group to determine what tools, jigs, gauges and fixtures are required to manufacture our new product at a rate of "Y" units per annum. He then estimates how much it will cost to design, make and prove these tools. In his submission you will see again the influence of the cost accountant because he has segregated the cost of those tools required to make the basic part of the design from the cost of those required to make components which will be subject to styling changes and, therefore, obsolescence. We are now in a position to determine an equitable rate of amortization per unit based on —

1. Tool Costs of the Static Part of the Design over Four Years Production.
- and
2. Tool Costs of the Variable Part of the Design over Not More Than Two Years Production.

### **Manufacturing: (a) Material Costs**

#### **(b) Direct Labour Costs:**

As stated in your introduction, material and direct labour costs may be estimated fairly accurately and it is not our intention to dwell on them. The product engineer has produced a bill of material and the process engineer has determined what components we shall purchase as a complete unit and what components we shall fabricate. This bill of material is turned over to the purchasing agent who enters the unit laid down costs and the cost accountant then translates it into the material cost of the product. Similarly, the rate setters in the pre-planning group have studied the routing sheets which designate the flow of the production and assembly operations and have estimated the times that it will take to perform these operations. The cost accountant applies the job rates of pay and arrives at a labour cost.

Where companies have a wage incentive scheme there is a growing trend in wage agreements between companies and their unions to fix the job rates of pay for incentive work and vary the base rate. Since the

## COST FACTORS IN PRICING NEW PRODUCTS

incentive rate is applied to hours earned as incentive and the base rate is applied to hours worked, it creates a nice accounting problem — what should we do with the differential. The answer is evident, we think, if we consider the rates of pay for incentive as our direct labour rates and the differential as a cost of living bonus which can be treated as a standard labour variance. By adopting this policy, we have fixed the rates of pay at which direct labour goes into work in process as well as the labour on which overhead rates are calculated. Therefore, if we are confronted with this problem in our wage structure, we must include in our product costs, a standard labour variance based on the product of the hours and the rate differential.

### **Manufacturing: Overhead Costs:**

Many books have been written on the subject of factory expense and its application to product costs and it is not our intention to enter into a long discourse on the matter. As you are fully aware, the course of action we adopt with respect to applying overhead to our new product is entirely contingent upon the conditions of manufacture and the policy we use in assessing service department expenses. Therefore, I should like to stipulate a set of manufacturing conditions which in point of fact, would be those as determined by the process engineer and outlined in his layout and brochure. Let us assume the following conditions exist:

1. That machine tools and equipment are such that we can adopt an overhead application based on a rate expressed as a percentage of direct labour rather than one based on machine hours or a combination of the two.
2. That there is sufficient capacity in feeder departments, such as the press department, automatic screw machine department, plating department, etc., to accommodate the load created in these departments by manufacture of "Y" units of the new product per annum.
3. That these departments exist as cost centres for which overhead rates have been calculated.
4. That we have the space in which we can instal all the equipment for specific and assembly operations and that this area will be made a cost centre.
5. That the company has a budgetary control system in which factory expenses are forecast on the basis of a flexible budget.

It has been assumed that there is capacity in the feeder departments to provide our requirements for the new programme, but we must not assume that the capacity of which the process engineer speaks is the same as that which the cost accountant used in calculating his overhead rates. He, in all probability, has used a normal capacity based on a

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sales forecast which did not include our new product whereas the process engineer has based his study on what is known as the "practical capacity". Therefore, the cost accountant must relate his new load to his normal capacity and, if it should exceed this capacity, he must revise his overhead rates for our consideration of overhead application to the new product in accordance with his revised normal.

Since the rate setters have established the time and job rates for the various operations in the feeder departments, it is a simple matter for the cost accountant, having established revised rates of overhead, to compute the amount that will be applied from these departments.

Now we must determine the overhead rate for the new cost centre. It will consist of two parts, direct expense incurred by the department and an assessment of some portion of the cost of operating service departments such as purchasing, stores, etc.

Let us consider the direct expense first, and, in that regard, our labour requirements. By relating the times established by rate-setters to the load we require (remember, we must discount the sales manager's X%) and applying an experience factor for re-works and miscellaneous indirect labour operations we can estimate fairly closely the staff of direct labour operators which we shall need. Likewise, by analyzing the number of set-up operations we can estimate the number of set-up operators. We know now what direct labour staff we require and, therefore, can establish the amount of supervision we need. With respect to any cost contingent upon the labour force we are now in a position to estimate it. With respect to space costs, the cost accountant has full details as to what we must charge for it. A study of the capital costs outlined in the brochure will specify the depreciation which must be charged. An analysis of the processes and equipment, together with experience derived from other cost centres, will enable us to establish estimates of costs arising from maintenance of equipment, maintenance of tools, operating supplies, perishable tools, etc. In short, it is not too difficult to forecast the direct expense of the department.

We must turn now to a study of the service departments and determine what extra staff they require. Inspection shall require additional inspectors, the stores shall require an extra storesman, etc. However, discussions with the chief inspector, chief storesman, etc., will determine all the additional costs, so let us assume we have all the details and are ready to make a distribution of the service department expense. What should we do — assess only the additional expenses incurred by the new programme or shall we make a functional analysis and distribute the service department cost on the basis of that analysis? By adopting the first policy, we are not charging our new department with any part of the fixed costs of our service departments whereas the second provides an equitable distribution of these fixed costs in which the new department bears its share. We shall adopt the second policy, but in sub-

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sequent considerations shall always remember that the fixed costs arising from service department expenses are not additional costs. We are now in a position to calculate the overhead rate of this new centre and when it is combined with the overhead rates of our feeder sections we may calculate the product overhead rate we shall use.

### **Distribution: (a) Sales Expense:**

It was with intent that we stipulated that our new product would be another product in an existing line because, we may assume that the sales coverage exists and that the new product will be distributed through the same channel as the remainder of the line. It is also assumed that sales expense is analyzed and segregated by line of products. Since orders for the new product shall be taken at no additional expense what shall we apply for selling expense? As we did in the case of factory expense we should revise our basis of distribution, whether it be sales volume, physical volume or any other base, to include a factor for the new product and make a distribution on the basis of sales expense and the revised basis.

This will distribute the sales expense equitably and our new product will bear its share. However, we must remember again that this is not an additional cost.

### **Distribution: (b) Advertising**

The results of advertising and promotional efforts manifest themselves in the form of advertising or promotional material. By far the biggest item in advertising expense is the media and this expense can be distributed on the basis of the products which benefit from it. As a rule advertising costs are budgeted and the amount which shall be spent is known. To advertise our new product would entail a separate expenditure which will be a known amount. Therefore, on the basis of the forecast sales, advertising expense can be expressed in terms of costs per unit.

### **Distribution: (c) Administrative Expense:**

Administrative Expense is usually composed of costs originating in a number of different functions amongst which are those incurred by the general executive offices. In the main, they cannot be measured in units which can be related to operations of other departments and, therefore, it is usual to apply them as a percentage of the sales volume. Again, it will be noted that we do not entail any additional administrative cost by introducing our new product but we shall apply the general percentage to it.

### **Distribution: (d) Shipping Expense:**

Shipping Expense actually embraces two types of expense: (1) costs of physical handling, warehousing and loading for transportation, and (2) costs of clerical operations such as making shipping bills, etc.



## COST AND MANAGEMENT

To distribute shipping costs equitably entails a search for a factor which measures cost incurring activity in each functional centre and use this factor as a basis for allocation. We made such an analysis and when we related the expense assessable to each product to the dollar volume of shipments the ratio was fairly constant. Therefore, we adopted this method in assigning our shipping expense. It will be noted that additional activity in shipments requires additional staff. These costs, therefore, are extra.

### **Distribution: (e) Transportation Costs:**

It is our intention to distribute our new product nationally F.O.B. the distributor. Therefore, to have a national price we must equalize transportation costs. In sponsoring the product the sales manager presented growth curves of the product in designated geographical areas and in terms of units. The cost accountant can easily establish equalized transportation costs by obtaining the transportation costs to the centre of the geographical areas and the percentage of our output which shall go to each area. The weighted average establishes the equalized transportation costs. This average will change with changing markets and it is very important that the cost accountant keep his finger on its pulse at all times.

### **Profit Margin: (a) Capital Employed and Turnover:**

And now we come to the question: "What factors should be considered in determining the margin of profit we should expect?" It is in this field, I think, that we, as cost accountants, have done the least to help management. If we were to go into our respective sales managers and asked him how he decides the profit margin, he should add to the cost of an article to establish the selling price, quite likely he would "hum and haw" a little and finally say something like "I add 10% to the cost," or "I try to find out how much the buyer is willing to pay," or "I try to find out what Joe Blow & Co. charge for the item." If, after making his reply, he turned the tables on us and said, "Why? What would you do?" would we be equally as embarrassed?

To give the sales manager his due, however, each of these methods must have merit or business would not survive. Nonetheless, not one of them give particular consideration to the chief object of operating a business venture, namely the earning of a profit commensurate with the capital required to produce and sell the article.

In the main, we, as cost accountants, have been content to present to our managements, the percentage of profit on sales. I, for one, have been guilty of this and felt that I had really determined the answer by doing so. But, was I not deluded? Is that enough to evaluate the returns on two articles and to compare these returns on a common plane? We submit that it is not. Let us use a simple example to illustrate our point. Suppose we had two articles which we manu-

## COST FACTORS IN PRICING NEW PRODUCTS

factured "A" and "B", that the annual sales of each article was \$100,000, that the total cost of "A" was \$99,000, that of "B" \$97,500, that the capital used on "A" was \$10,000 and the capital used on "B" was \$50,000. Then we would have this set of conditions:

|                                    | Product "A" | Product "B" |
|------------------------------------|-------------|-------------|
| Sales .....                        | 100,000     | 100,000     |
| Total Cost of Sales .....          | 99,000      | 97,500      |
| Profit .....                       | 1,000       | 2,500       |
| Percentage of Profit .....         | 1%          | 2.5%        |
| Capital Used .....                 | 10,000      | 50,000      |
| Annual Turnover in Capital Used .. | 10 times    | 2 times     |
| Yield on Capital Used .....        | 10%         | 5%          |

As a percentage of sales product "B" shows a greater profit than product "A" but, there is no doubt as to which provides the better return on the capital used.

Now if we accept this criterion of yield on capital used as being the yard-stick by which we measure our profit margin we must put ourselves in the position of being able to determine the yield. From the example above we see that the percentage of profit on sales multiplied by annual turnover will determine the yield. Turnover is the result of dividing the sales dollars by the capital used. This, therefore, is the link that is missing.

The capital used in a business usually is invested in some or all of the following items:

- Land, Buildings and Equipment
- Inventories
- Receivables
- Cash and Cash Investments
- Prepaid Expense and Deferred Charges
- Patent, Royalty, Goodwill
- Investments in other Companies

The proportions of these items vary in individual businesses and, of course, the capital used may be invested or borrowed funds or both, but our objective is to earn a profit commensurate with the capital used and the risks involved in such use.

Therefore, our first need is to establish a profit rate. Let us assume that we need a return of 5% after taxes and that tax rates are 50%. We would need, therefore, 10% on capital used.

Now we are going to make the biggest assumption, i.e., we know the amount of capital used. I could give you an example and show how it is derived but, the exercise would take much more time than we have at our disposal. However, if you are interested in the matter, there is a volume "Capital Yield Reports", by Reuben S. Oliver of Tucakhoe, New Jersey, which gives a very good exposition on the subject. At this juncture I should like to refer back to my remarks on the two schools of

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thought with respect to research and development where I stated that I preferred a basis of amortization. The reason is that I consider the amount amortized as capital used and the cost of work which had no commercial value as a business risk to be considered when establishing the profit rate on capital used. Let us assume that the capital used in our new product is \$100,000 and our sales volume is \$500,000 per annum. Therefore, our turnover is 5 times and the standard profit margin is 2% of the sales dollar.

At this point the thought may have occurred to you that I have given no consideration to the interest on bonded indebtedness or bank loans. My answer to this would be that there is no reason to believe that the yield on a dollar you borrow should be greater than on one you own. The only difference is that in the first instance you share it with the bond holder or bank whereas in the second it is yours.

### **Profit Margin: (b) Competition:**

At this point we have all the factors on which to establish our selling price. It is true that we have some costs as real amounts and others, together with the profit margin, as percentages of the selling price, but we have sufficient data that, by the solution of a simple algebraic equation, we can determine what the sales price should be.

We now take this price to the sales manager who compares it with competitive prices and, if it is lower, he is happy as a lark. If it is on the same level as competitors he laments about it somewhat, but if it exceeds their prices he wails loud and long and suggests that maybe you should check your addition.

It is then we recall that we included some factors for fixed costs that were not additional costs and, we know exactly what they were. Since they were originally assessed to other products, by whatever share was being borne by our new product their profit position would have improved. This factor must be studied carefully and if the amount can be reduced sufficiently to make the price competitive it should be done so. After all we shall still receive 10% on our capital used.

In conclusion I should like to quote from an article I read on profit planning which is apropos of a paper such as I have given, "that the definiteness with which principles of profit planning doctrines are laid down imply rules for their application which are flat, rigid and static. There is no surer way of discrediting the doctrines themselves, principles and rules of application require most judicious use because they are but trend indices of the composite reactions of many fluid factors working upon each other. No single doctrine or technique is a panacea for all profit situations and no substitute exists for sound judgment after scrutiny of all fact surrounding a particular set of circumstances."

# Plant Capacity Control . . .

By J. H. BARRETT, C.P.A.,  
Public Accountant, Detroit, Michigan.

*In these days which feature unprecedented demand for production and high levels in the break-even point of operations, the importance of maximum utilization of plant facilities is accentuated. What are the techniques for bringing the cost of unutilized plant facilities under effective management control? As one answer to this problem of idle equipment and machines, the author suggests the institution of a Volume Loss and Gain Account.*

**W**HEN you see factory workers idle because of strikes or any other cause, are you chiefly concerned because of the loss of the manpower? You certainly should be, because the level of living which we enjoy is absolutely dependent upon production. The food, clothing, furniture, electric appliances and whatever else we count upon as basic needs cannot be more than the quantity produced. That is one of the cardinal principles of economics.

There is another phase of this matter of idle workers which should concern you a great deal more and that is the idle production facilities. Did you know that over 90% of the energy which in these modern times goes into production is the energy supplied by machines and other mechanical devices? Electric motors, conveyors, cranes, lift-trucks, lathes, presses, drills and hundreds of other mechanical devices now supply the major part of the energy that used to be supplied by human muscles and skills.

Most of us go to great lengths to account for the time expended by productive workers and to account for the loss of their time in order to establish controls. We should know how much paid-for time is lost because of machinery breakdowns, shortages of material and for lack of normal productive effort. How much more important is it that we account for the loss of use of the equipment and facilities which supplies such an overwhelming part of the productive effort.

Of course, it does the enterprise no service if what we account for is not used by management as a tool to cut costs and increase earnings. Our reports on excess labour costs can be extremely useful to management in reducing costs if such reports break down the excesses into categories representing the basic causes therefore. Likewise accounting for idle facility costs can be most useful if the causes for idleness are shown and the equipment involved is identified.

## The Axiom of the Sales Price

It is axiomatic that sales prices must represent total costs plus a margin of profit if the enterprise is to remain long in the land of the living. Of course, competition has a very great influence upon prices, and if competitive prices are not higher than a manufacturer's costs, he

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must reduce his costs or else. In order to reduce his cost, he must know where his excess costs are. That is the task of the accountant.

One of the reasons for unused plant facilities is that sales volume is insufficient to fully utilize the plant capacity. If the costs of those unused facilities are unknown and thereby included in the product costs which are used for sales estimating and product pricing, the manufacturer may well find himself priced out of the market. The inevitable result of allowing such a condition to continue is to further hamper sales and aggravate the losses occasioned by unused facilities.

It may well be that sales prices should include some elements of the costs of idle facilities, but the important point is that management should know just how much is so included and the reasons therefore. For example, we know that every manufacturing plant, no matter how well managed, has machinery down-time because of repairs, incidental shortages of material and maybe die-setting. Normal amounts of such costs should be in the selling prices of every manufacturer. However, each manufacturer should know what these costs amount to and strive to reduce them as much as possible.

Other costs which are doubtful elements of sales prices include the costs of unbalanced equipment. The problem of the job shop in this respect is quite different from that of the production shop. The former must have whatever equipment is deemed necessary to handle whatever orders may be reasonably expected to develop. In such a case, it is reasonable that sales prices should include the costs of owning such equipment. That does not mean that the costs of idle equipment may be ignored, because one's competitor may have better employment for his equipment and thereby have lower selling prices.

The development of costs of idle plant facilities is quite normal for those who employ standard costs. Under such a system, variances from normal costs are shown in break-down form, and one of these variances is bound to be that of idle facilities. If standard costs are not used, it is still a relatively simple matter to withdraw from the product burden such costs as are determined to relate to idle equipment. Such withdrawn costs would then be shown as a separate item on the operating or earnings statement.

### **What Should Be Included in Idle Equipment Costs?**

We should now consider just what we will include in the cost of idle equipment. Naturally we first think of depreciation, taxes and insurance. The inclusion of depreciation on a normal basis is quite debatable. Income tax regulations and custom more or less force us to take full depreciation on a machine whether it is operated normally or only a part of the time. Theoretically we should take depreciation on a hours-of-use basis, but not less than an amount representing expected obsolescence. That can be quite complicated and as long as almost everyone is using normal depreciation, we had better stick to that.

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Of course, there are other factors of costs relating to idle machines. There is the idle floor space which costs something for depreciation, taxes and insurance. There are idle power-supply lines, maybe gas or water lines, transformers or what not. Only a complete analysis of facility costs will reveal the complete picture.

### Volume Loss or Gain Account

I believe that we should not stop there. The plant involved in our study has been staffed to produce a certain quantity of goods. To produce that quantity is not going to cost significantly more for superintendence than if less is produced. We still must have an employment manager, a safety director maybe, but surely a chief cost or industrial accountant. Should we permit our unit product costs for such elements to vary between periods simply because volume is up or down. I think not because we are not getting the full picture before management. So I highly recommend for your consideration the development of a Volume Loss or Gain Account rather than just an account for Idle Facilities.

It is time that we begin to figure how we are to get these costs of idleness broken down into categories suitable for management's use. The first step in my thinking will be to tie in with production planning, that function, by whatever name called, which determines what equipment is required and which equipment is to be used for each production job.

There are so many varieties of manufacturing establishments that time does not permit reference to more than one, the production shop. The principal steps believed necessary for getting the basic information for a Volume Loss or Gain Account are as follows:

1. A management decision as to the number of hours per week which will be considered normal for the plant. For example it might be two shifts of eight hours each for five days a week.
2. The designation of a certain piece of equipment, or group of machines, which is the bottleneck of production. The decision will probably consider any equipment of relatively high cost as a bottleneck. For example, a plant with expensive presses would class those as the bottleneck, rather than assembly equipment, spot welders, square shears or such. The latter equipment can be augmented at low cost to balance productive facilities — the former is high-cost.
3. Computing the amount of normal downtime for machine repairs. Possibly this will have to be a careful estimate at the start. After the system has been put into operation, it is important that records be kept of all downtime by causes.
4. A decision as to the unit of production. It might be the direct-labour hour, the standard direct-labour hour or what-

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ever basis seems a natural one for the particular plant. This is the unit of production used generally throughout the cost accounting system.

5. The computation of the number of normal hours for a year, based upon the normal hours per week but discounted for regular holidays. The final step in normalizing is to apply a factor to cover external interruptions such as model changes, strikes, valleys in customer demand and all such things which are common to the industry as a whole. Quite commonly the factor used is a discount of 20 to 25 per cent.
6. The determination of the normal units of production for a year, giving consideration to normal hours of operation for the year and normal downtime for repairs. This is to be done by burden centres and maybe even by individual bottleneck machines. The normal units of production in other centres than the bottleneck must be based upon the normal for the bottleneck.
7. The calculation of the estimated dollars of fixed costs for a year, which it is determined should be included in the calculation of Volume Loss or Gain. This should be done at least by burden centres and maybe by individual machines of the bottleneck class.
8. The dividing of the annual dollar fixed costs by the annual normal units of production to give the fixed cost per unit of production, all on the estimated bases.

Having determined the normal fixed cost per unit of production, the monthly calculation of Volume Loss or Gain becomes simple. Multiply the actual units produced for the month by the normal fixed cost per unit, and compare the product with the monthly average estimated fixed costs. If there is an excess, there is a volume gain, or a loss if vice versa. This should be done by burden centres at least. If important variances show up, the figures should be available to break the variances down to individual expensive machines.

Caution is urged with respect to the detail involved. Do not break down the information any finer than can be useful to management. There is no use spending \$1,000 to point out \$500 of excess costs.

On the other hand, there have been instances where information developed by accounting has led to detail studies by the planning function resulting in important increases in earnings. New equipment has been added to balance productive facilities, and excess equipment has been sold. Rearrangements have been made in production lines. Certain products or productive services have been added to absorb the unutilized time of certain machines without adding to the burden of bottleneck equipment.



## PLANT CAPACITY CONTROL

### The Relation of the Budget

You will recognize that the foregoing contemplates the creation of a budget of fixed costs. Recognition should be given to the fact that few costs are actually fixed. One answer is to develop a variable budget. Another is to recognize that management cannot change its key organization with every short-lived fluctuation in volume. Under such thinking fixed-expense budgets would be prepared for various activity levels, such as 80% of normal, 70%, etc. Management would then have to decide when changes in volume are expected to last sufficiently long to warrant the change to another basis of budgeted fixed costs.

Just as in any budget or standard cost system, experience will indicate wherein estimates should be sharpened not only in the budget of fixed costs but also in the calculation of normal downtime and the other elements of the computation of normal units of production.

As previously indicated, some of the fixed costs which get into Volume Loss by reason of low volume should undoubtedly be included in sales estimates. The important thing is that it be known by management what that factor is in order that consideration may be given to it when competitive prices are troublesome.

You may have noticed that estimated or budgeted fixed costs are used in calculating Volume Loss or Gain. The inevitable differences between the estimated or budgeted fixed costs and actual fixed costs is to be considered an operating variance subject to control, almost to as great an extent as variable expenses. Under such a conception, there is no need to try to determine just what actual fixed expenses amount to. I doubt if you could do so even if you tried. You could not possibly derive enough benefit from the attempt to pay for the extra effort required.

### The Final Objectives

The end objectives of the recommendations which I have made to you are:

1. More intelligent sales estimating and pricing.
2. Information leading to the reduction of excess costs due to low sales volume or unbalanced productive facilities.
3. Elimination of the distortion in product costs which is always present when the cost of idle facilities or partly unused organization is allowed to flow into the unit costs of actual production.

If you can attain these objectives, your contribution to intelligent management should make you proud of your accomplishment and greatly enhance your prestige as a member of the Management Team.

# Student Section . . .

Comments by J. D. CAMPBELL, C.A., R.I.A.

## ACCOUNTING II — 1952 EXAMINATION

### QUESTION VIII (15 marks)

From the following particulars, taken from the books of AB Co., Ltd., as at December 31st, 1951, prepare a balance sheet as at that date having due regard to proper classifications and forms. (Including any earned surplus items.)

|   |              |
|---|--------------|
| Buildings   | \$ 25,000.00 |
| Leasehold premises  | 75,000.00    |
| \$50,000, 8% debentures, sold at 90 and redeemable at 100, repayable December 1st, 1952 (\$500 discount unamortized).         |              |
| Bills receivable discounted   | 30,000.00    |
| Share capital: Authorized 150,000 shares of \$5 each; subscribed 100,000 shares, of which \$2.50 has been called up and paid. |              |
| Calls paid in advance   | 2,500.00     |
| Reserve fund of \$60,000 invested in Dominion of Canada Bonds, at par, earmarked for expansion of facilities.                 |              |
| Advances by company to creditors to insure future deliveries of purchases   | 162,000.00   |
| Bills receivable  | 12,500.00    |
| Reserve for future decline in inventory values  | 7,500.00     |
| Depreciation reserve (\$2,000 — Furniture and Fixtures)   | 8,600.00     |
| Accounts payable  | 10,000.00    |
| Accounts receivable   | 40,000.00    |
| Reserve for bad debts   | 2,900.00     |
| Bank Overdraft  | 11,250.00    |
| Furniture and Fixtures  | 3,700.00     |
| Inventory, December 31st, 1951  | 17,400.00    |
| Cash  | 300.00       |
| Accrued charges payable, \$2,400; prepaid expenses \$2,000.   |              |
| Interim dividend paid   | 15,000.00    |
| General reserve   | 2,500.00     |
| Goods out on consignment at cost (unsold)   | 66,000.00    |
| (Patent rights less \$5,000 written off)  | 7,000.00     |
| Reserve for expiration of leaseholds  | 24,000.00    |
| Premium on shares   | 12,500.00    |
| Organization expense  | 8,750.00     |
| Surplus — balance at credit, January 1st, 1951  | 10,250.00    |
| Unclaimed dividends   | 50.00        |
| Profit for year 1951 before provision for income taxes  | 40,700.00    |
| Income taxes are estimated at \$10,000 for the year.  |              |

### SOLUTION TO QUESTION VIII (15 marks)

#### AB CO. LTD

Balance Sheet as at 31st December, 1951

#### ASSETS

##### Current:

|  |            |
|--|------------|
| Cash   | \$ 300     |
| Bills receivable   | 12,500     |
| Accounts receivable  | \$ 40,000  |
| Less: Reserve for bad debts  | 2,900      |
|  | 37,100     |
| Inventory, as determined and certified by responsible officials of the Company, and valued at cost | 17,400     |
| Inventory of goods on consignment, valued at cost  | 66,000     |
| Advances to creditors (Secured)  | 162,000    |
| Prepaid expenses   | 2,000      |
|  | \$ 297,300 |

## STUDENT SECTION

|   |                  |           |                   |
|---|------------------|-----------|-------------------|
| <b>Reserve Fund Investments:</b>        |                  |           |                   |
| Dominion of Canada bonds, at cost (Par) |                  |           | 60,000            |
| <b>Capital or Fixed:</b>                |                  |           |                   |
| Buildings                               | \$ 25,000        |           |                   |
| Furniture and fixtures                  | 3,700            |           |                   |
|   | <u>\$ 28,700</u> |           |                   |
| Less: Depreciation reserve              | 8,600            | \$ 20,100 |                   |
|   | <u>\$ 75,000</u> |           |                   |
| Leasehold premises                      | 24,000           | 51,000    | 71,100            |
| Less: Reserve for expiration            |                  |           |                   |
|   | <u>\$ 8,750</u>  |           |                   |
| Preliminary expenses                    |                  | 7,000     | 15,750            |
| Patent rights                           |                  |           |                   |
|   |                  |           | <u>\$ 444,150</u> |

## LIABILITIES

|  |                  |            |                   |
|--|------------------|------------|-------------------|
| <b>Current:</b>                            |                  |            |                   |
| Bank overdraft                             | \$ 11,250        |            |                   |
| Provision for income taxes                 | 10,000           |            |                   |
| Accounts payable                           | 10,000           |            |                   |
| Accrued charges payable                    | 2,400            |            |                   |
| Dividends unclaimed                        | 50               |            |                   |
| 8% Debentures due December 1, 1952         | \$ 50,000        |            |                   |
| Less: Unamortized discount                 | 500              | 49,500     | \$ 83,200         |
|  |                  |            |                   |
| <b>Capital and Surplus:</b>                |                  |            |                   |
| Share capital:                             |                  |            |                   |
| Authorized—150,000 shares of \$5.00 each.  |                  |            |                   |
| Issued— 100,000 shares on which \$2.50 has |                  |            |                   |
| been called and paid                       |                  | \$ 250,000 |                   |
| Calls paid in advance                      |                  | 2,500      |                   |
| <b>Capital Surplus:</b>                    |                  |            |                   |
| Premium on shares                          | 12,500           | \$ 265,000 |                   |
|  |                  |            |                   |
| <b>Surplus Reserves:</b>                   |                  |            |                   |
| Reserve fund                               |                  | 60,000     |                   |
| Reserve for redemption of debentures       |                  | 2,500      |                   |
| Reserve for contingencies                  |                  | 7,500      |                   |
| <b>Earned Surplus:</b>                     |                  |            |                   |
| Balance 1st January, 1951                  | \$ 10,250        |            |                   |
| Add: Profit for year 1951                  | 40,700           |            |                   |
|  | <u>\$ 50,950</u> |            |                   |
| <b>Deduct:</b>                             |                  |            |                   |
| Dividend declared and paid                 | \$ 15,000        |            |                   |
| Estimated provision for income taxes       | 10,000           | \$ 25,000  | \$ 25,950         |
|  |                  |            | 360,950           |
|  |                  |            | <u>\$ 444,150</u> |
| <b>Contingent Liability:</b>               |                  |            |                   |
| Bills receivable under discount            |                  | \$ 30,000  |                   |
| Director—                                  |                  |            |                   |
| Director—                                  |                  |            |                   |
| Auditor's Report—                          |                  |            |                   |

### COMMENTS:

The primary criticisms which might be offered in respect to the solutions presented in answer to this question fall within the category of classification of the respective items shown as between assets and equities and classifications within the separate sections.

## COST AND MANAGEMENT

Among the more prevalent errors which occurred were the:

- (1) inclusion of the Bills Receivable Under Discount as a current asset or a current liability without a compensating amount appearing among the liabilities or assets. This item was not included in the figure presented constituting the data for the balance sheet except for purposes of providing information for the footnote.
- (2) the inclusion of Calls Paid in Advance and Premiums on Shares as an asset.
- (3) the failure to include either the Fund Investment or the Surplus Reserve Fund.

In several cases provision was made in determining the surplus balance for the income taxes with no corresponding liability being set up among the current liabilities.

The classification of the Proprietorship Reserves as current liabilities, grouped together under the reserve section, or shown as deductions from certain assets were prevalent.

A degree of lenience in assigning marks to this question was applied. It was rather strange the combinations which students found possible in order that the statement might be made to balance.

It was interesting to note that the item of Dividends Declared and Paid was treated as a Prepaid asset, a current liability and in numerous cases omitted entirely.

### QUESTION XI (20 marks)

Comparative balance sheets of the Provincial Manufacturers Limited are as follows:—

|                                   | As at October 31st     |                        |
|-----------------------------------|------------------------|------------------------|
|                                   | 1950                   | 1951                   |
| Cash .....                        | \$ 53,600.00           | \$ 126,400.00          |
| Victory bonds .....               | 202,500.00             |                        |
| Accounts receivable .....         | 473,000.00             | 708,300.00             |
| Inventory .....                   | 580,900.00             | 665,600.00             |
| Prepaid expenses .....            | 10,200.00              | 7,000.00               |
| Investments in subsidiaries ..... | 344,500.00             | 314,000.00             |
| Fixed assets at cost .....        | 685,000.00             | 726,800.00             |
|                                   | <u>\$ 2,349,700.00</u> | <u>\$ 2,548,100.00</u> |
| Accounts payable .....            | \$ 375,900.00          | \$ 427,200.00          |
| Reserve for income taxes .....    | 57,000.00              | 74,100.00              |
| Reserve for depreciation .....    | 268,000.00             | 283,000.00             |
| Capital stock .....               | 1,000,000.00           | 1,150,000.00           |
| Earned surplus .....              | 648,800.00             | 613,800.00             |
|                                   | <u>\$ 2,349,700.00</u> | <u>\$ 2,548,100.00</u> |

The loss of \$1,000 on the sale of a fixed asset during the year, which cost \$10,000 and had an accumulated applicable reserve for depreciation of \$5,000, was charged to profit and loss. The profits of \$4,500 on sale of shares in a subsidiary (book value \$30,500) and \$5,000 on sale of victory bonds had been credited to profit and loss. Profits for the year ended October 31st, 1951, after provision for depreciation amounted to \$115,000. Dividends paid during the same period amounted to \$150,000, of which \$75,000 was a stock dividend and \$75,000 paid in cash.

### REQUIRED:

A statement of application of funds and changes in working capital for the year ended October 31st, 1951.

**SOLUTION TO QUESTION XI (20 marks)**

**PROVINCIAL MANUFACTURERS LIMITED**

Work Sheet for Statement of Application of Funds for Year Ended 31st October, 1951.

|                                   | Increase          | Decrease          | Adjustment<br>Increase      Decrease | Working Capital<br>Increase      Decrease | S. & A. Funds<br>Applic.      Source |
|-----------------------------------|-------------------|-------------------|--------------------------------------|---|--------------------------------------|
| Cash .....                        | \$ 72,800         | \$ 202,500        | \$ 5,000                             | \$ 72,800                                 | \$ 207,500                           |
| Victory bonds .....               | 235,300           |                   |                                      | 235,300                                   |                                      |
| Accounts receivable .....         | 84,700            |                   |                                      | 84,700                                    |                                      |
| Inventory .....                   |                   | 3,200             |                                      |   |                                      |
| Prepaid expenses .....            |                   | 30,500            |                                      |   |                                      |
| Investment Subsidiary .....       |                   |                   | 4,500                                |   |                                      |
| Fixed assets .....                | 41,800            |                   | \$ 10,000                            |   | \$ 35,000                            |
| Accounts payable .....            |                   | 51,300            |                                      |   |                                      |
| Reserve for taxes .....           |                   | 17,100            |                                      | 51,300                                    |                                      |
| Reserve for Depreciation .....    |                   | 15,000            | 20,000                               | 17,100                                    |                                      |
| Capital stock .....               |                   | 150,000           | 75,000                               |   |                                      |
| Earned surplus .....              | 35,000            |                   | 115,000                              |   |                                      |
|                                   | <u>\$ 469,600</u> | <u>\$ 469,600</u> |                                      |   |                                      |
| Net profit .....                  |                   |                   | 4,500                                | 1,000                                     | 106,500                              |
| Sale fixed assets .....           |                   |                   | 5,000                                | 115,000                                   | 4,000                                |
| Depreciation .....                |                   |                   |                                      | 4,000                                     | 20,000                               |
| Dividends .....                   |                   |                   |                                      |   |                                      |
| Increase in Working Capital ..... |                   |                   | 75,000                               | 113,700                                   | 75,000                               |
|                                   |                   |                   |                                      | <u>\$ 392,800</u>                         | <u>\$ 240,500</u>                    |
|                                   |                   |                   |                                      | <u>\$ 392,800</u>                         | <u>\$ 240,500</u>                    |

The above work sheet would be supported by formal statements of source and application of funds and changes in working capital.

**COMMENTS:**

Very few students completed this question and those who did in very few cases presented the finished product. There was a failure to realize the nature of the statement and proper application of the effect of interrelated items such as the profits and losses involved in certain of the transactions which were given.

## COST AND MANAGEMENT

### QUESTION IX (8 marks)

- (a) Is it regarded as good accounting to take up profits on uncompleted work under the following conditions:—
- (i) The work is being made for stock?
  - (ii) The work is being made under a contract at a fixed price?
  - (iii) The work is being done on a cost-plus basis?
- (b) Assuming that it is necessary to estimate the profit on an uncompleted contract, how should the computation be made?

### SOLUTION TO QUESTION IX (8 marks)

- (a) (1) The taking up of profits on uncompleted work which is being made for stock will involve the anticipation of profits before realization through sale and, therefore, will be contrary to good accounting. The accounting principle of not anticipating profits before realization is applicable.
- (2) Where the work is being made under a contract at a fixed price it is not customary to take up profits until the terms of the contract have been completed. The costs incurred may exceed the expected total. Under circumstances where the contract extends over a number of years and it is desirable to present periodic statements of profit and loss, the principle of completion is sometimes waived and a conservative estimate of the profit on the completed portion of the contract is made. The reason for this procedure is an attempt to present more informative periodic statements which may be of significance from the standpoint of more accurate determination of equities as at a point of time.
- (3) Where the work is being done on a cost plus basis the incurrence of the cost results in providing a basis for the determining of the profit. Under such circumstances, since the profit can be readily determined, it is acceptable to take up profits to the extent that costs have been incurred in any given period.
- (b) Where it is considered necessary to estimate the profit on an uncompleted contract the customary method is to estimate the total profit to be earned on the contract and to take up that proportion of the total estimated profit on the basis that the cost of the work done to date bears to the total estimated cost.

### COMMENTS:

In submitting the answer to this particular question the student in numerous cases followed the question requirement literally, indicating under subsection (a) yes or no without any comment as to the underlying reasons. As the answer suggested above indicates no clear cut statement of this nature is applicable and, therefore, some comment should have been presented to support the stand which was taken.

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